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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LAMBRECHT, CHRISTOPHER M	
ART UNIT	**PAPER NUMBER**
2623	

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/729,248	LEE, JONG JIN	
	Examiner	Art Unit	
	Chris Lambrecht	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/21/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed May 25th, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material that is not supported by the original disclosure is as follows: The position and orientation of the "int-out" terminal added to Figures 5 and 6 are not supported by the originally filed disclosure.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1–3, 6, 7, 9, 10, 12, 14, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,550,063 ("Matsuura").

Regarding claim 1, Fig. 1 of Matsuura illustrates a channel module apparatus (31) for a cable set-top box (30) comprising a switching block (M1), a tuner block (M4), a channel demodulation block (M5), and a radio frequency modulation block (M3). Switching block M1 includes first and second signal distributors: The first signal distributor comprises HPF 33, LPF 57, and directional coupler 34; high frequency relay 35 represents the second signal distributor.

The first signal distributor receives a radio frequency signal via input connector 32 and distributes it as first and second signals. The first signal is output by directional coupler 34 to a cable modem tuner (blocks 51–55 of fig. 1) and the second signal is passed through the directional coupler to relay 35. Additionally, a signal transmitted from the cable modem tuner is transferred to input terminal 32. (See col. 3, lines 45–60.)

The Second distributor 35 receives the second signal from directional coupler 34 and distributes it as third and fourth signals. The third signal is output to a television via the path connecting S1, S2, and output terminal 46. The fourth signal is distributed from S1 of the second distributor (35) to the tuner block (M4) at common tuner 36. (See col. 4, lines 14–26, 45–60.)

The output of tuner block M4 is demodulated into audio and video signals at demodulator block M5. The demodulated audio and video signals are then modulated into a television signal at the radio frequency modulation block (M3). (See col. 3, line 59 – col. 4, line 27.)

As to claim 2, Fig. 2 of Matsuura teaches that the switching block (M1), modulation block (M3), tuner block (M4), and demodulation block (M5) are contained in a single chassis in the form of one package (network interface module 30; see col. 5, lines 30–35).

As to claim 3, Fig. 1 also discloses a high pass filter HPF 33 for blocking the signal transmitted from the cable modem tuner and passing high-frequency components of the second signal to the second signal distributor (see col. 3, lines 45–60).

Regarding claim 6, Matsuura discloses a channel module apparatus for a cable set-top box comprising a radio frequency modulation block and switching block having first and second signal distributors as discussed above with respect to claim 1. In addition, S2 of high frequency relay 35 (see Fig. 1) is switches the third signal (from directional coupler 34 via S1) and a television signal (from modulator block M3) to output terminal 46. (See col. 4, lines 14–26, 45–60.) Switching these

signals to output terminal 46 mixes them in the time domain. Thus, the switching block (M1) of Matsuura further comprises the claimed mixer.

As to claims 7, 9, 10, and 12, see Matsuura as applied to claims 2 and 3, above.

Regarding claim 14, the channel module apparatus (31) illustrated in Fig. 1 of Matsuura includes an RF input connector (32), a cable connector (56), and an RF output connector (46). Input connector 32 is connected to an external cable and a television is connected to output terminal 46. (See: col. 3, lines 45–60; col. 4, lines 14–26.) QPSK Modulator 54 is a tuner of the cable modem that comprises blocks 51–55, and is external to module 31. Cable connector 56 is connected to modulator 54 and is therefore connectable to an external cable modem tuner. (See col. 4, line 60 – col. 5, line 3.)

Channel module apparatus 31 further includes a switching block (M1) having first and second signal distributors. The input of first signal distributor is connected to input terminal 32; a first output is connected to LPF 57; and, a second output is connected to HPF 33. A signal from terminal 32 is distributed as a first signal to LPF 57 and as a second signal to HPF 33. The first output is connected to the cable connector 56 via LPF 57, and a signal transmitted by the cable modem tuner is transferred from connector 56 to RF input 32 via LPF 57. (See: col. 3, lines 45–60; col. 4, line 60 – col. 5, line 3.)

High frequency relay 35 represents the second signal distributor. The second distributor receives an input from the second output of the first distributor (i.e., from output of HPF 33), and outputs third and fourth signals as discussed above with respect to claim 1. Further, Matsuura discloses the claimed tuner block (M4), channel demodulation block (M5), and RF modulation block (M3) as also discussed above with respect to claim 1.

Tuner block M4 is disposed within module 31, which is further disposed in set-top box 30 (see fig. 1). Thus, tuner block M4 constitutes a tuner of the set-top box. Further, tuner block M4 is connected to second signal distributor 35 at S1 (i.e., the fourth output). Therefore, channel module apparatus comprises a tuner connection terminal connectable to a tuner of the set-top box. Additionally, the fourth output of the second distributor 35 is connected to the tuner connection terminal.

As to claim 15, Matsuura further discloses a high pass filter (HFP 33) coupled between the second output of the first signal distributor and the input of he second signal distributor (35) for blocking the signal transmitted from the cable modem tuner via said first signal distributor, and passing high-frequency components of the second signal to the second signal distributor. (See: col. 3, lines 45–60; Abstract.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4, 8, 11, 13, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura.

Regarding claims 4, 8, 11, 13, and 16, Matsuura discloses the channel module apparatus of claims 3, 7, 10, 12, and 15 as discussed above. But Matsuura fails to disclose first and second amplifiers that are enabled in response to a booster voltage to amplifying the second and third signals, as claimed.

Official notice is taken of the fact that the first and second amplifiers, as claimed, are well known in the art. For instance, signal distribution blocks, such as that disclosed in the network interface module of Matsuura, commonly employ amplifiers between signal splitters and switches in order to compensate for signal losses resulting from branching a signal into two or more paths.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the switching block of Matsuura to include first and second amplifiers, enabled in response to a booster voltage to amplify the second and third signals, to maintain desired signal levels throughout the signal path.

As to claim 17, Matsuura discloses the channel module apparatus in accordance with claim 16 as discussed above. In addition, Matsuura discloses the claimed mixer as discussed with respect to claim 6.

As to claim 18, Matsuura discloses a housing in which said switching block (M1), RF modulation block (M3), tuner block (M4), and channel demodulation block (M5) are accommodated. (See: col. 5, lines 15–35; Fig. 2.) The housing further includes RF input connector (32), cable connector (57), tuner connection terminal (coupling relay 35 of M1 to common tuner 36 of M4), and RF output connector (46). (See Fig. 1.)

As to claim 19, Matsuura discloses the channel module apparatus of claim 18, including an input/output pin connector (forming connections between external processor 53 and internal elements under its control; see Fig. 1).

As to claim 20, Matsuura discloses the channel module apparatus of claim 19, wherein said housing is in the shape of a box with said RF input and output connectors being arranged on a first side of the box (see Fig. 2). Matsuura is silent, however, on the placement of the cable connector and the input/output pin connector.

Official notice is taken of the fact that it is well known in the art to place input/output pin connectors along a second side that is adjacent to the first side of a module such as that disclosed by Matsuura (e.g., along the lower edge of the module illustrated in Fig. 2). Further, Official notice is taken of the fact that it is well known in the art to position a cable connector on a third side that is adjacent to the first two (e.g., either the front or back of the module illustrated in Fig. 2). These connector arrangements optimize the spatial configuration of the module while reducing EMI between the various terminals.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the housing of Matsuura to include the cable connector and the input/output pin connector on second and third sides of the box, each adjacent to the first side, to optimize the housing's size and electrical characteristics.

Response to Arguments

6. Applicant's arguments with respect to claims 1–20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris Lambrecht whose telephone number is (571) 272-7297. The examiner can normally be reached on M-F, 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on M-F at (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris Lambrecht
Examiner
Art Unit 2623

CL

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